

a gap for introducing a primary fluid flow in said vessel, said gap located distal of said therapy balloon;

injecting fluid out of said gap to promote retrograde flow into said discharge lumen.

29. The method of claim 7 further including a suction applied to said sheath lumen to withdraw material from said vessel.

30. The method of claim 28 further including a suction applied to said sheath lumen to withdraw material from said vessel.

REMARKS

Pending Claims:

In this application, claims 7-9; 18-24 and 27-30 are currently pending.

Drawings:

Fig. 9 as filed in the original application shows the lack of an occlusion balloon on the sheath and the sheath in the vessel to allow blood flow in the vessel. The specification has been amended to support the language in the claims. A drawing correction adding reference numerals is provided for the approval of the Examiner.

Rejection under 35 U.S.C. §112 (paragraph 1)

The lack of an occlusion balloon has been supported in the specification as amended.

Rejection under 35 U.S.C. §102(b)

Claims 7-9 18-24 28 29 and 30 all have the limitation "said sheath not having an occlusion balloon thereon such that said sheath partially blocks the vessel but allowing some blood flow in the vessel ". This language distinguishes the claims from the Neracher reference '482 which shows a proximal occlusion balloon as element 14 in Figure 4. Because of this limitation the claims do not read on Neracher.

Claims 7-9 and 18-24 28, 29 and 30 all have the limitation "said sheath not having an occlusion balloon thereon such that said sheath partially blocks the vessel but allowing some blood flow in the vessel". This language distinguishes the claims from Carbo which shows a proximal occlusion balloon on the sheath labeled as item 44 in Fig. 4 or 5.

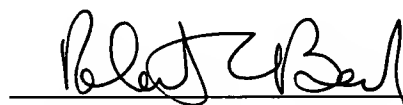
Claims 7 and 28 have each have the limitation "said therapy balloon completely occluding said vessel during the delivery of therapy". This language distinguishes the inventions from Fischell '425. In Fischell the "balloon" structure seen deployed in Fig. 7 engages the wall of the artery at only a few points thus allowing flow past the structure into the collection lumen 28. The applicants claim does not cover this structure as the "therapy balloon" called for by the applicant must substantially fully occlude the vessel during therapy.

CONCLUSION

All of the claims remaining in this application should now be seen to be in condition for allowance. The prompt issuance of a notice to that effect is solicited.

Respectfully submitted,
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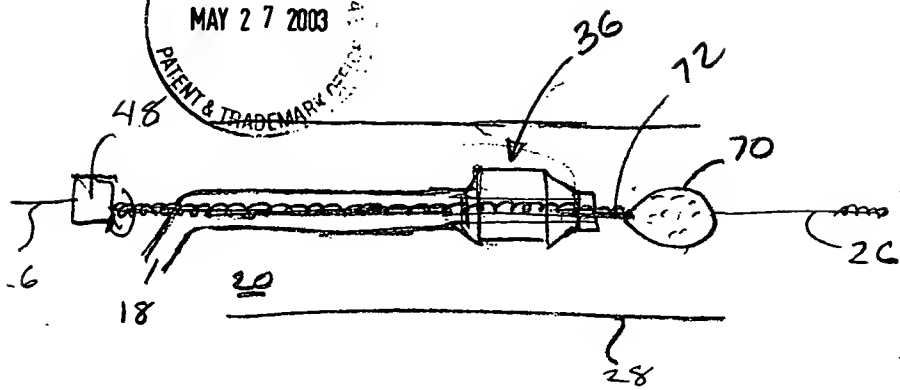


FIG. 6

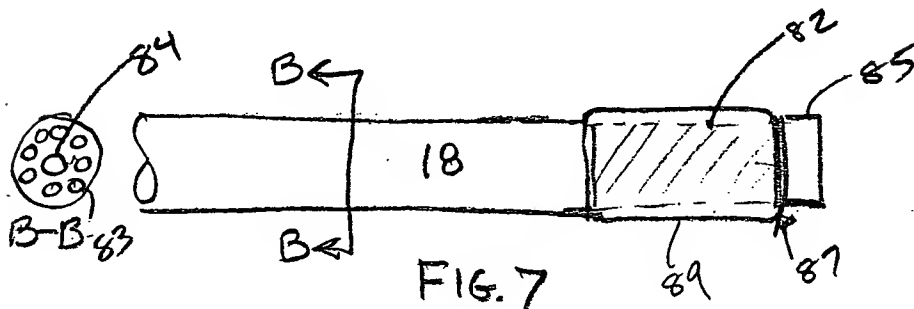


FIG. 7

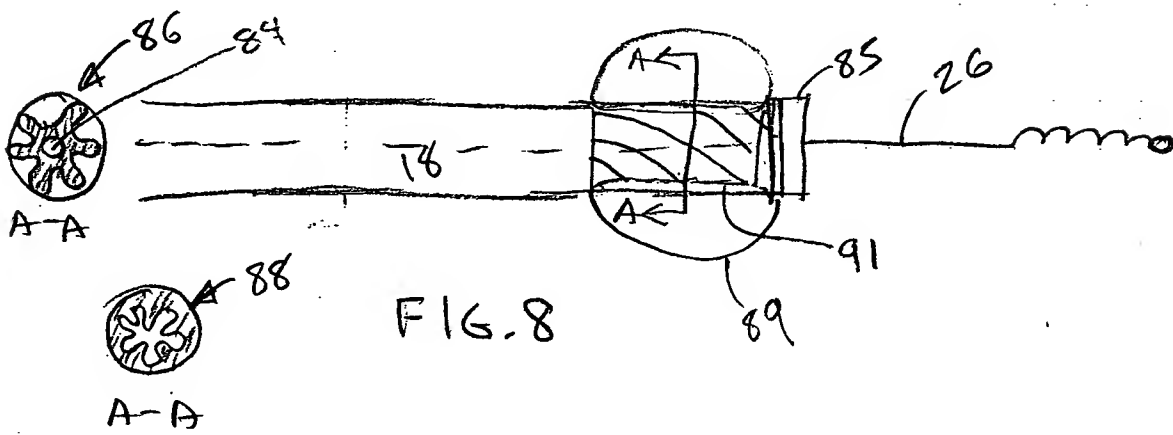


FIG. 8

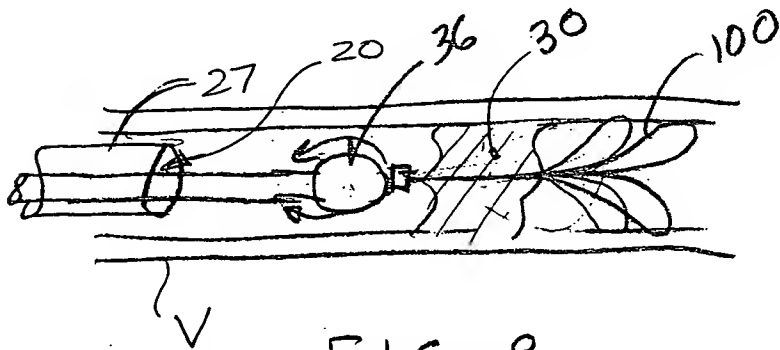


FIG. 9



Version With Markings to Show Changes

7. A method of removing particulate debris from a vessel using a catheter assembly the method comprising:

inserting and advancing a sheath having a discharge lumen to a location in the vessel said delivery sheath discharge lumen coupled to a collection ~~vessel~~; vessel, said sheath not having an occlusion balloon thereon such that said sheath partially ~~blocking~~ blocks the vessel but allowing some blood flow in the vessel;

inserting and advancing an interventional device to a treatment location, said interventional device of type having;

an angioplasty therapy balloon for delivering angioplasty treatment;

a gap for introducing a primary fluid flow in said vessel, said gap located distal of said therapy balloon;

injecting fluid out of said gap to promote retrograde flow into said discharge lumen.

8. The method of claim 18 wherein said moving step begins near said occlusion and ends after the interventional device enters the delivery sheath.

9. The method of claim 7 wherein said fluid is injected at a first injection pressure above the blood pressure in the vessel and expands to a second exhaust pressure in said delivery catheter where said exhaust pressure is above said blood pressure, establishing a pressure gradient in said discharge lumen and promoting flow from said gap to said discharge lumen.

18. The method of claim 7 wherein said injection is carried out while moving said interventional device in said vessel with respect to said delivery sheath.

19. The method of claim 7 wherein said discharge lumen is coupled to a syringe collection chamber.

20. The method of claim 7 wherein said discharge lumen is coupled to a syringe vacuum chamber.

21. The method of claim 7 wherein said primary fluid is supplied by a supply syringe chamber.

~~22-22.~~ The method of claim 21 wherein the fluid supplied is a thrombolytic.

23. The method of claim 21 wherein the fluid supplied is saline.

24. The method of claim 21 wherein the fluid supplied is contrast agent.

~~25. (cancelled) The method of claim 7 wherein the therapy balloon provides angioplasty therapy.~~

~~26. (cancelled) The method of claim 7 wherein the therapy balloon provides stent placement therapy.~~

27. The method of claim 7 wherein said primary fluid is supplied by a supply syringe chamber and said discharge lumen is coupled to a syringe vacuum chamber, and said supply syringe and vacuum syringe are operated together to couple fluid supply with discharge lumen collection.

28. ~~(new)~~ A method of removing particulate debris from a vessel using a catheter assembly the method comprising:

inserting and advancing a sheath having a discharge lumen to a location in the vessel said delivery sheath discharge lumen coupled to a collection vessel; said sheath not having an occlusion balloon thereon such that said sheath partially blocking blocks the vessel but allowing some blood flow in the vessel;

inserting and advancing an interventional device to a treatment location, said interventional device of type having;

a stent deployment therapy balloon for delivering stent treatment;

a gap for introducing a primary fluid flow in said vessel, said gap located distal of said therapy balloon;

injecting fluid out of said gap to promote retrograde flow into said discharge lumen.

~~30. (new) The~~ 30. The method of claim 7 further including a suction applied to said sheath lumen to withdraw material from said vessel.

~~31. (new) The~~ 31. The method of claim 29 further including a suction applied to said sheath lumen to withdraw material from said vessel.